Remarks/Arguments:

Claim 1 has been rejected under 35 U.S.C. Section 112 as being indefinite. The Examiner asserted, referring to lines 5-9, that the laterally extending arm is not vertical although it is part of a substantially vertically supported column assembly. Claim 1 has been amended to make it absolutely clear that the laterally extended arm is supported at one end from the vertically supported column assembly and includes a second end portion that laterally extends from the vertically supported column assembly. The foregoing Amendment should obviate the rejection under 35 U.S.C. Section 112. Claims 3, 13 and 14 were indicated as having allowable subject matter and as now amended in independent form should be allowable.

In paragraph 2 of the Office Action, Claims 1, 4-12 and 15-16 are rejected under 35 U.S.C. Section 103 (a) as being unpatentable over Burrows, et al. (US 5,878,099) in view of Kurosawa et al. (US 6,058,153), Pierson et al. (US 5,456,130) and Gay et al. (US 6,145,583).

As previously explained in Applicants' response dated June 20, 2005, Applicants' Claim 1 calls for a system for delivering a tool to opposite sides of the underlying tubular body. The reference to Burrows et al. is directed to a delivery system which enables repeatable positioning of inspection or other service tools at a specified region on the inner diameter of a shroud wall (column 3, lines 8-12). The motorized trolley 118 that the Examiner cites in Burrows et al. is not a motorized trolley at all and doesn't ride on an upper lip of the underlying tubular body. The positioning unit 118 in Burrows et al. is stationarily supported on the lip of the shroud by horizontal member 124 with slots that attach to the seismic pins on the shroud as shown in Figure 4 (column 3, lines 30-45 and column 4, lines 47-61). The positioning unit 118 supports a vertical adjustment screw 132 that is manually operated to vertically position a rail assembly 122 on which the operable tool lies. The rail assembly is supported from a mast 134 that is connected to coupling 130 on

the positioning assembly 118. In order for the delivery system 100, which includes the positioning unit 118 to be moved, it has to be hoisted by the square shaft 127 though the use of a remotely operated handling pole as explained with regard to Figures 4A and 4B (column 4, lines 29-37). Accordingly, Burrows et al. does not teach the use of a motorized trolley assembly configured to ride on an upper lip of the underlying tubular body as asserted by the Examiner.

Next the Examiner equates the Burrows et al. column 134 to Applicants' substantially vertically supported column. However, the Burrows et al. column 134 does not have a first part which is rotatably mounted on a trolley assembly as called for in Applicants' Claim 1. In fact, the column 134 of Burrows et al. is not designed to rotate at all with respect to the positioning bracket of 118.

Furthermore, Burrows et al. does not teach an arm member attached at one end to the vertically supported column assembly and laterally extending therefrom such that rotation of the column assembly positions a peripheral end portion of the laterally extending arm member on either an inboard side or an outboard side of the underlying tubular body. Burrows et al. is specifically designed to operate solely on the inboard side of the tubular member.

Kurosawa et al. is cited for disclosing a system for delivering a tool comprising a motorizing trolley 6 riding on an underlying tubular body upper lip and a continuous 360° track assembly. More specifically, Kurosawa et al. teach preventive maintenance apparatus for structural members inside a nuclear reactor pressure vessel that includes a ring shaped guide rail having a plurality of lugs which is placed on the upper flange of a core shroud provided inside a reactor pressure vessel. A turntable is rotated on the guide rail having a first discharging nozzle moving apparatus affixed to the turntable that moves a first discharging nozzle for adding compressive stress to an outer surface of the core shroud in the radial and axial direction of the core shroud. A second discharging nozzle is affixed to a diametrically opposed periphery of the turntable for adding compressive stress to an inner surface of the core shroud in both a radial and axial direction of the shroud. The Examiner asserts in furtherance of the rejection that Kurosawa et al. teach "a vertical column assembly 9, having a first part rotatably mounted on a trolley." While

the vertical column 9 of Kurosawa et al. rotates with the turntable, which the Examiner analogizes to the trolley, the column 9 does not have a first part rotatably mounted on the trolley assembly. Furthermore, Kurosawa et al. do not describe teach or show an arm member having one end attached to the vertically supported column assembly and a second end portion laterally extending from the vertically supported column assembly and spaced from the first part such that rotation of the column assembly positions a peripheral end portion of the laterally extending arm member on an inboard side or an outboard side of the underlying tubular body as called for in Applicants' Claim 1. The Examiner asserts that "rotating a vertical column assembly [9] positions a laterally extending arm peripheral end portion 8 on a underlying tubular body inboard side, or an underlying tubular body outboard side, and a tool 10, 24." The laterally extending arm that the Examiner refers to in Kurosawa et al. is part of the discharge nozzle moving apparatus mounted on the turntable. The laterally extending arm 8 is movable in the radial direction to radially position the vertical column 9. The vertical column 9 is attached to a peripheral end of the arm 8 and the vertical column 9 is only movable in an axial direction of the shroud and does not rotate. Kurosawa et al. do not teach any means for rotating a vertical column 9 such that the laterally extending arm member 8 positions a peripheral end portion of the laterally extending arm on either an inboard side or an outboard side of the underlying tubular body, providing the peripheral end portion of the laterally extending arm access to both the inboard side and outboard side of the underlying tubular body. In one embodiment, Kurosawa et al. teach two tools 10, 10B extending from a laterally extending arm 8E, one for operating on the inside surface and another for operating on the outside surface of the tubular member; both extending from the laterally extending arm 8E in Figure 13. However, rotation of either column 9A does not place the laterally extending arm on either the inboard side or the outboard side of the underlying body, providing the same arm access to both sides of the tubular member. Additionally, Kurosawa et al. do not teach a motorized trolley assembly configured to ride on an upper lip of the underlying tubular body at the same time a refueling operation is underway without obstructing fuel being moved within or into or out of the core during the refueling operation. The

turntable of Kurosawa et al. apparently completely blocks refueling access to the core. Furthermore, while it is possible for the tool of Burrows et al. to be adapted to be affixed to the turntable of Kurosawa et al., there would be no motivation to combine those teachings because the tool of Burrows et al. is designed to work on the inboard side of the tubular member and the inboard laterally extending arm of Kurosawa et al. shown in Figures 7 and 13 as reference character 79, appears more versatile for the area that it covers. Accordingly, Kurosawa et al. fail to cure the deficiencies noted for Burrows et al.

Pierson et al. was cited by the Examiner as disclosing:

> a vertical column assembly 12 rotating about vertical access 14 and having a first part 16 and a laterally extending arm 60 wherein rotating a vertical column assembly positions a laterally extending arm peripheral end portion 60 and wherein in a laterally extending arm extends at a downwardly angle between 45 and 60 degrees.

Pierson actually teaches a load balancing arm having improved control including a programmable control element and electronic air regulation to provide precise and controllable lifting force on a load. The disclosed load balancing arm responds to slight operator applied force to aid in the movement of the load in overcoming system hysteresis, friction, and load inertia without requiring the operator to apply a sufficiently large magnitude force to overcome such counteracting forces in the system. The load balancing arm further includes automatic load weight detection sensors for accommodating variation in load weights while applying a lifting force to the load which substantially equals the weight of the load. This allows the operator to move the load freely throughout a work space. None of the foregoing appear to have application to either the invention of Claim 1 or that of Burrows et al. or Kurosawa et al. Under the background of the invention, where Pierson et al.'s stated purpose is noted, the specification states "the invention relates generally to mechanical lifting apparatus, and particularly to load balancing arms for carrying the weight of a load and allowing an operator to then move the load by operator applied forces within a work space." The operators of the invention of Applicants'Claim 1 and for that matter of the inventions of Burrows et al. or Kurosawa et al. would have

no need for such a tool. Accordingly, it is respectfully asserted that the teachings of Pierson et al. have no application to those of Burrows et al. or Kurosawa et al. and any attempt to use hindsight reconstruction in light of the Applicants' own teachings to pick and choose among isolated disclosures in a prior art is clearly improper. As the court stated in In re Fritch 972 F2d 1260, 23 USPQ 2d 1780 (CAFC 8/11/92)

> Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination... the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification ... here the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissable to use the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has stated that "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Accordingly, it is respectfully asserted that Pierson fails to cure the deficiencies previously noted for both Burrows et al. and Kurosawa et al.

Gay et al. was cited as disclosing an extendable pole assembly and teaches a telescoping pole assembly for inspecting the interior of steam generators. Each of the telescoping elements of the extendable pole assembly has a circular cross section. Gay et al. provide no other relevant teaching and therefore fails to cure the deficiencies noted above for Burrows et al., Kurosawa et al. and Pierson et al.

Claims 4 and 5 depend either directly or indirectly on Claim 1 and distinguish for the reasons noted for Claim 1. Claim 6 calls for the substantially 360 degree track assembly set forth in Claim 5 wherein the track assembly is adjustable to fit different diameter tubular bodies. While Kurosawa et al. describe a turntable that rides on a 360 degree rail supported from lugs on an upper flange of core shroud, it does not describe, teach or show an adjustable rail designed to accommodate different diameter tubular bodies. Accordingly, Claim 6 distinguishes for the

additional limitation that it introduces. Claim 7 is indirectly dependent upon Claim 1 and distinguishes for the reasons noted above. Claim 8 calls for the delivery system of Claim 4 wherein the motorized trolley assembly includes a remotely operated cam that when rotated clamps on to the track to aid stability. Neither Burrows et al., Kurosawa et al., Pierson et al., or Gay et al. teach such an arrangement. Claim 9 calls for the delivery system of Claim 1 wherein the first part of the column assembly rotates approximately 180 degrees. Neither of the references appear to teach such an arrangement. Claim 10 is dependent upon Claim 1 and distinguishes for at least the reasons noted above. Claim 11 calls for the delivery system of Claim 1 wherein the laterally extending arm member extends at a downwardly directed angle and Claim 12 calls for the downwardly directed angle to be within 45 to 60 degrees. Neither of these limitations appear to be described or shown in any of the references applied by the Examiner in Paragraph 2 of the Office Action.

The Examiner further asserted with respect to Claim 7 that Burrows et al. disclose maintaining a pole assembly 122 in a vertical orientation. However, Burrows et al. does not support the pole assembly on a trolley that rides on a track that maintains the pole assembly in a vertical position.

More specifically with respect to the rejection of Claim 8 the Examiner asserts that while Burrows et al. does not disclose a remotely operated cam. Kurosawa et al. discloses a cam 16A such that the carriage remains within a track (Column 7, Lines1-40). The cited portion describes the drive for the turntable and states:

> The drive mechanism comprises a motor 54, gears 55A, 55B attached to a shaft 57 and a gear 56. The gear 55A is engaged with a gear 55C attached to a rotating shaft of the motor 54. The gear 55B is engaged with the gear 56. The gear 56 is attached to a shaft 58 of a wheel 16 rotatably attached to the turn table 6. The wheel 16 runs on a rail 15 installed on an upper surface of the guide rail 5. Since both of projecting portions 16A provided in the inner side and the outer side of the wheel 16 interpose the rail 15 the wheel 16 does not run off the rail 15 during rotating the turntable 6.

The, reference character 16A does not describe a cam, but describes the projecting portions on the wheel 16. According, as noted above, Claim 8 distinguishes further for the individual limitations that it introduces.

Further with respect to Claim 9, the Examiner asserts that while Burrows et al. did not disclose a column assembly first part that rotates 180 degrees, Pierson et at is said to disclose a 180 degrees of rotation of a vertical column assembly 12 rotating about vertical access 14 and having a first part 16 and a laterally extending arm 60 wherein rotating a vertical column assembly radially positions a laterally extending arm peripheral end portion 60. The Examiner concluded that Pierson et al. teach rotating a column and laterally extending arm to manipulate loads with repetitive and repeatable positioning of the work tool 120 (Columns 1 through 4).

As previously stated above, Pierson et al. relates to mechanical lifting apparatus, and more particularly to load balancing arms for carrying the weight of the load and allowing an operator to then move the load by operator applied forces within a workspace. Neither of the references or Applicants' invention have use of such a tool. Accordingly, there is no suggestion supporting the combination that the Examiner is trying to establish. As stated in re Bell 991 F2d 781, 26 USPQ 2d 1529 (CAFC 4/20/93): "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting of the combination." Accordingly, Claim 9 distinguishes over Burrows et al in view of Pierson et al.

The Examiner asserted with respect to Claim 10 that while Burrows et al. do not disclose a tool that rotates 180 degrees Gay et al. disclose a tool that rotates 180 degrees (Column 1 – 2). Applicants were not able to identify a description within Columns 1 and 2 that refer to rotation of a tool around an arc of 180 degrees. It would be appreciated that the Examiner would specifically point out the lines in Columns 1 and 2 that the Examiner believes provides such a teaching.

Claims 15 and 16 were similarly rejected under 35 U.S.C Section 103 over Burrows et al., in view of Kurosawa et al., Pierson et al., and Gay et al. Claim 15 calls for the delivery system of Claim 1 wherein the extendable pole assembly includes a plurality of nested telescoping sections. While Gay et al. do teach a telescoping pole assembly the reference does not teach such an assembly in the arrangement called for in Claim 1. Thus, Claim 15 distinguishes for the reasons noted for Claim 1. Claim 16 calls for the delivery system of Claim 15 where each of

the telescoping sections has a square cross section. None of the cited references show a telescoping pole where each of the ligaments has a square cross section. The square cross section's rotational rigidity provides added benefit. Accordingly, Claim 16 distinguishes for the individual limitation that it introduces in addition to those set forth in the Claims from which it depends.

The Examiner further asserted with respect to Claim 15 that while Burrows et al. do not disclosed nested telescoping sections, Gay et al. disclose an extendable pole assembly 12 that includes nested telescoping sections. Applicants agree that Gay et al. do disclose nested telescoping sections but fail to cure the other deficiencies noted for Burrows et al. with respect to Claim 1. Since Claim 15 is dependent upon Claim 1 it should be allowable for the distinguishing reasons noted above.

More specifically with respect to the rejection of Claim 16 the Examiner asserted that while Burrows et al. do not disclose a square telescoping pole, Gay et al. teach a pole that extends and maneuvers a tool around a complex nuclear reactor vessel geometry needing inspection and/or repair and attaches no significance to a square telescoping cross section (Columns 1-2). The Examiner concluded that Applicants' choice of the square cross section is merely a change in size that provides no benefit or improvement over the prior art. Applicants respectfully disagree. The square cross section provides rotational rigidity that's not found in the teaching of Gay et al. and provides significant improvement over a round telescoping cross section that would not exhibit the same rigidity. Accordingly, Claim 16 distinguishes over Burrows et al. in view of Gay et al. for the individual limitation that it introduces.

In Paragraph 3 of the Office Action Claim 2 stands rejected under 35 U.S.C. Section 103 (a) as being unpatentable over Burrows et al. in view of Kurosawa et al., Gay et al. and Hinds (US 4,349,837). In support of the rejection the Examiner asserted that Burrows et al. do not disclose a camera on a column assembly, but Hinds discloses a camera 27 on top of a stationary port 26. The Examiner went on to state that Hinds teaches a camera mounted on a column assembly for operator assisted remote manipulation of a tool (Column 2). Claim 2 calls for the delivery

system of Claim 1 wherein the column assembly includes a second stationary part and a remotely positionable camera mounted on an upper portion of the second stationary part above the first part of the rotatable mounted vertical support column assembly to provide an overview of the tool as the tool is moved. In contrast, Column 2, cited by the Examiner, describes a remote manipulator system in which a television camera is mounted at the free end of the manipulator arm to relay a target image to a monitor having image alignment markings thereon. The manipulator arm has an indicator locator at the free end for use in mounting and releasing a complimentary component with respect to a support structure to properly align the complimentary component with respect to the support structure. The manipulator is described in the environment of a cargo bay of a space orbiter and employed for satellite retrieval and servicing. Thus, the camera described in Hinds is located at the free end of the moveable arm and is moveable with the arm, though fixedly attached thereto so that it is properly positioned for its alignment function. The Hinds camera is thus not a remotely positional camera mounted on an upper portion of the second stationary part above the first rotatable portion of the column assembly. Accordingly, Claim 2 should not rightfully be considered obvious over Burrows et al. in view of Kurosawa et al., Gay et al. and Hinds.

In Paragraph 4 of the Office Action Claim 17 and 18 stand rejected under 35 USC section 103 (a) as being unpatentable over Burrows et al. in view of Kurosawa et al., Pierson et al., Gay et al. and Silverman et al. In support of the rejection the Examiner has asserted that Burrows et al. disclose a system for delivering a tool comprising a camera to clean and subsequently inspect reactor vessel components. However, the Examiner acknowledged that Burrows et al. do not disclose a hydrolaser. Claim 17 calls for the delivery system of Claim 1 wherein the tool is a camera including a hydrolaser for directing a stream of high pressure fluid over the area that the camera is viewing. Claim 18, which is dependent on Claim 17 further defines the hydrolaser as including two spray nozzles located to direct non interfering streams of high pressure fluid in opposite directions to balance the reaction forces on the camera. The Examiner asserted that Figures 1 through 4 of Silverman et al. disclose a system for delivering a tool within a reactor comprising a

tool 6 including a camera 6, and a hydrolaser 34 to direct high pressure fluid (Column 6, lines 8-32), a hydrolaser including two spray nozzles 34 to prepare and inspect a submerged surface of a fluid reservoir (Column 1, lines 5-35).

Silverman et al. actually describe a method apparatus for cleaning and inspecting the bottom surfaces of fluid reservoirs such of large tanks without first draining them, with a remote controlled submersible vehicle, which removes sediment from the reservoir's surfaces by a scrubbing and/or vacuuming process. The reference simultaneous provides video and/or acoustic inspection of the freshly cleaned surfaces. The referenced section in Column 6 at lines 8 – 32 states:

> One embodiment of the scrubbing mechanism, illustrated in the underside view of FIG. 4B, utilizes a rotating brush 33 to break up deposited sediment. The brush may be driven by a geared connection to the propulsion motor 4 or a separate motor may be provided for it. An alternative embodiment of the scrubbing mechanism is the hydrolaser illustrated in FIG. 4C, which utilizes high velocity jets of filtered reservoir fluid to break up deposited sediment. The embodiment shown consists of a manifold of four nozzles 34 mounted to a faceplate 34a on the front of vehicle body 17. The nozzles 34 can be selected to accommodate different spray widths and delivery pressures up to 3000 psi. These would be particularly suitable for highly irregular surfaces. A combination of brushes and hydrolasers, or other dislodging scrubbing mechanisms may also be used.
>
> The vacuum inlet 37 is located in the top surface of the robotic vehicle and connected by flexible part 38 to an external pump (not shown). While a pump may be located on the vehicle 1 within the purview of the present invention, the added weight and vibration that would result may not be desirable. In the preferred embodiment, the pump is capable of moving up to 300 gallons of sediment and fluid per minute through a 2-3 inch diameter flexible pipe 38 which connects it to the vehicle.

In the first instance, Silverman et al. does not cure any of the deficiencies previously noted for Burrows et al. with regard to claim 1. Furthermore, Silverman et al. teaches a need to clean the surface with the hydrolaser in combination with a vacuum and supports the hydrolaser from a vehicle firmly seated on the bottom of the reservoir. In contrast, Applicants are suspending the hydrolaser from a

cantilevered pole over an extended distance. It is respectfully asserted that it would not be obvious to employ a hydrolaser under the conditions set forth in claim 17. Additionally, there is no teaching in Silverman et al. to employing two spray nozzles located to direct non-interfering streams of high pressure fluid in opposite directions to balance the reaction forces on the camera as called for in claim 18. It is respectfully asserted that claims 17 and 18 patentably distinguish over Burrows et al. in view of Silverman et al. for the reasons stated with regard to claim 1 in addition to the individual limitations that they introduce.

Thus, Applicants have shown wherein the subject matter of claims 1 through 18 are neither described, shown or taught in the references, either considered individually or in combination; nor should they rightfully be considered obvious thereover. Accordingly, reconsideration, allowance and passage to issue of this application are respectfully requested.

Respectfully submitted,

By _____

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